

**REMARKS**

**I. Formal Matters**

Claims 1-11 are currently pending in this application.

As an initial matter, Applicant thanks the Examiner for approving the drawings filed with the application papers on August 21, 2003. Applicant also thanks the Examiner for acknowledging the claim to priority under 35 U.S.C. §119 and for confirming receipt of the priority document.

**II. Specification**

Pursuant to the Examiner's objection to the Abstract for exceeding the 150-word limit, Applicant hereby amends the same to comply with MPEP §608.01(b). Accordingly, withdrawal of the objection to the Abstract is respectfully requested.

**III. 35 U.S.C. §103(a)**

Claims 1-11 are rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over *Zheng* (U.S. Patent No. 6,347,170 B1). Applicant respectfully traverses this rejection in view of the following remarks.

Independent Claim 1. The Examiner asserts that *Zheng*'s Fig. 1A and its corresponding text disclose all the elements of Applicant's claim 1, except one. The Examiner acknowledges that *Zheng* fails to disclose equal optical path lengths for transmitted and reflected light (OA pages 2-3). The Examiner alleges that this element is obvious and can be achieved by routine experimentation.

A proper claim rejection on §103(a) obviousness grounds must meet three criteria. One, there must be an explicit or implicit suggestion or motivation to combine the references; two, a reasonable expectation of success; and three, a suggestion or teaching of all claim limitations (MPEP §2143.01-2143.03).

Addressing element one of a proper rejection under §103(a), since there is no explicit motivation to modify the device in *Zheng* to achieve equal optical path lengths, is there an implicit motivation to do so? The Examiner asserts that a motivation exists for equal path lengths to provide equal energy losses (OA page 3). The Examiner also asserts that equal optical path lengths would provide "the same signal strength between input and output." With or without equal optical path lengths, a system yielding equal signal strength at the input and the output is a non-realizable zero-loss system. The Examiner is presumably asserting a motivation for equal optical path lengths to provide equal percentage loss of incident light in reflected and transmitted light. However, this motivation to modify *Zheng* also fails for the reasons provided below.

First, equal signal strength and equal signal losses are not the only consideration or motivation in designing an optical system. In contrast to the Examiner's asserted motivation for providing equal optical path lengths, Applicant respectfully directs the Examiner's attention to paragraph [0008] of the instant specification, wherein it is disclosed that distribution lenses of the same length are conventionally used to reduce manufacturing costs, which inherently results in different optical path lengths with diagonal end faces. Manufacturing costs are a motivation, consideration, in system design, wherein equal signal strength maybe a relatively lower priority. Further, *Zheng* clearly discloses a different motivation for his invention, which is to efficiently align and couple the lenses to fibers (*Zheng*, cols. 1-3).

Furthermore, *Zheng* discloses a conventional method for coupling a WDM between a first and a second GRIN lens. *Zheng* discloses the coupling of the remaining end of the first GRIN lens to two optical fibers, one incident path and one reflective path, and coupling a transmission optical fiber to the remaining end of the second GRIN lens (Fig. 1A). *Zheng* discusses the desire for epoxy-free optical paths and the relative positions of the three optical fibers to their relative GRIN lenses to provide minimal optic signal loss *due to coupling the fibers to the lenses.* (col. 1, lines 34-44 and 59-64; and col. 4, lines 4-16). *Zheng* discloses an inventive means to efficiently align and to affix with heat curing epoxies, the optical device described above. Neither in the text and figures cited by the Examiner, nor in the text at large, does *Zheng* disclose an off-center axis, misaligned, coupling of fibers to their relative GRIN lens.

In contrast, Applicant claims equal optical path lengths from a first port for incident light to second port for reflected light through a first distribution lens and from said first port to a third port for transmitted light through the first then a second distribution lens, each lens having diagonal faces, wherein the positioning of the ports results in equal reflective and transmission optical path lengths. Because the objective of *Zheng* is to efficiently align and affix fibers to diagonal face lenses with non-epoxy contaminated fixation, there is no motivation to modify *Zheng* to achieve Applicant's invention of claim 1.

Additionally, addressing element two of a proper §103(a) rejection, the extensive disclosure in *Zheng* for aligning the lens to the fibers by the use of holding tubes and epoxy (Fig. 2B; col. 3, lines 38-51) suggests that an attempt to align fibers off-center using the method disclosed in *Zheng* would fail (*Zheng* at Fig. 2B; application at Fig. 3).

At least for failing to provide a motivation to modify the disclosure in *Zheng* to obtain Applicant's claimed element of equal optical path lengths, and for failing to show a reasonable expectation of success to modify the disclosure in *Zheng* to arrive at Applicant's equal optical path lengths, the rejection of claim 1 as being allegedly obvious over *Zheng* under 35 U.S.C. §103(a) is asserted to be improper, and withdrawal of said rejection is respectfully requested.

Independent Claim 5. The Examiner asserts that Fig. 1B and its corresponding text disclose the elements of Applicant's claim, except one. The Examiner acknowledges that *Zheng* fails to disclose a first optical path length different from a second optical path length,

compensating for a difference in focal lengths of lights with different wavelengths due to wavelength dispersion of said first and second collimator lenses (OA pages 4-5). The Examiner asserts that such a difference in optical path length is obvious in consideration of a desire to accommodate different lenses with different dispersion properties for use in a WDM device, and that such difference in path length is readily achieved through routine experimentation.

A proper claim rejection on §103(a) obviousness grounds must meet three criteria. One, there must be an explicit or implicit suggestion or motivation to combine the references; two, a reasonable expectation of success; and three, a suggestion or teaching of all claim limitations (MPEP §2143.01-2143.03).

Addressing element one of a proper §103(a) rejection, the Examiner asserts a motivation to modify *Zheng* to accommodate lenses with different dispersion properties. In contrast, Applicant claims a difference in optical path lengths for different wavelengths of reflected and transmitted light, wherein the relative difference in wavelength dependent dispersion is compensated for. Lacking an explicit motivation to modify the disclosure in *Zheng* to arrive at different optical path lengths corresponding to wavelength dependent dispersion, Applicant asserts that an implicit motivation is also lacking and hereby asserts the arguments presented traversing the motivation to modify *Zheng* to obtain equal optical path lengths in claim 1, above.

The grounds for traversing an expectation of success to modify *Zheng* to arrive at a difference in optical path lengths corresponding to wavelength dependent dispersion is analogous

to the argument presented for the same §103(a) element in claim 1. Therein, the arguments asserted for claim 1 above are hereby asserted for claim 5.

At least for failing to provide a motivation to modify the disclosure in *Zheng* to obtain Applicant's claimed element of different optical path lengths corresponding to wavelength dependent dispersion, and for failing to show a reasonable expectation of success to modify the disclosure in *Zheng* to arrive at Applicant's different optical path lengths corresponding to wavelength dependent dispersion, the rejection of claim 5 as being allegedly obvious over *Zheng* under 35 U.S.C. §103(a) is asserted to be improper, and withdrawal of said rejection is respectfully requested.

Dependent claims 2-4 and 6-11 are asserted to be in condition for allowance at least from their dependence on an allowable independent claim.

In view of the preceding amendments and remarks, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue that the Examiner feels may be best resolved through a personal or telephonic interview, the Examiner is kindly requested to contact the undersigned attorney at the local telephone number listed below.

AMENDMENT UNDER 37 C.F.R. §1.111  
U.S. SERIAL NO. 10/644,831

ART UNIT 2872  
Q75981

The USPTO is directed and authorized to charge all required fees (except the Issue/Publication Fees) to our Deposit Account No. 19-4880. Please also credit any over-payments to said Deposit Account.

Respectfully submitted,

*Amelia F. Morani*

Amelia F. Morani, Ph.D.  
Registration No. 52,049

**SUGHRUE MION, PLLC**  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

WASHINGTON OFFICE  
**23373**  
CUSTOMER NUMBER

Date: March 18, 2005